



Transition to Operations Activities to Support TEMPO

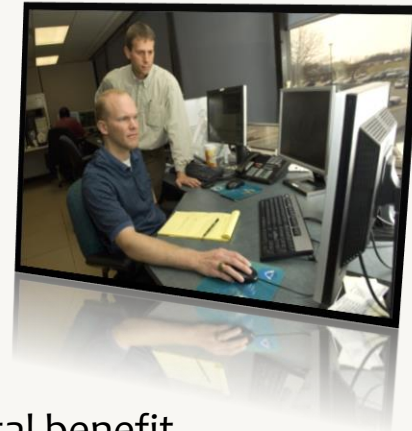
May 26, 2015

Short-term Prediction Research and Transition (SPoRT) Center

SPoRT is focused on transitioning unique NASA and NOAA observations and research capabilities to the operational weather community to improve short-term weather forecasts on a regional and local scale.

- close collaboration with numerous WFOs and National Centers across the country
- SPoRT activities began in 2002, first products to AWIPS in 2003
- co-funded by NOAA since 2009 through satellite “proving ground” activities

Proven paradigm for transition of research and experimental data to “operations”



Benefit

- demonstrate capability of NASA and NOAA experimental products to weather applications and societal benefit
- prepares forecasters for use of data from next generation of operational satellites (JPSS, GOES-R)

Partnerships with NOAA



Over 30 NWS WFOs
and All Regional
Headquarters



NOAA Cooperative Institutes
as Data Delivery and
Product Development Partners



National Centers
for Environmental Prediction

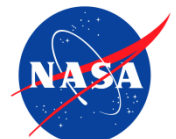
Environmental Modeling Center
National Hurricane Center
Weather Prediction Center
Ocean Prediction Center
Aviation Weather Center
Storm Prediction Center

Legend

- Product Development Partner
- National Center Evaluation Partner
- NWS Regional Headquarters
- WFO Collaborative Partner



SPoRT collaborates with NOAA Cooperative Institutes to develop and distribute products to partnering NWS WFOs and National Centers, providing unique observation and modeling capabilities to support their daily forecasting operations.



SPoRT R2O/O2R Paradigm

Bridge the “Valley of Death”

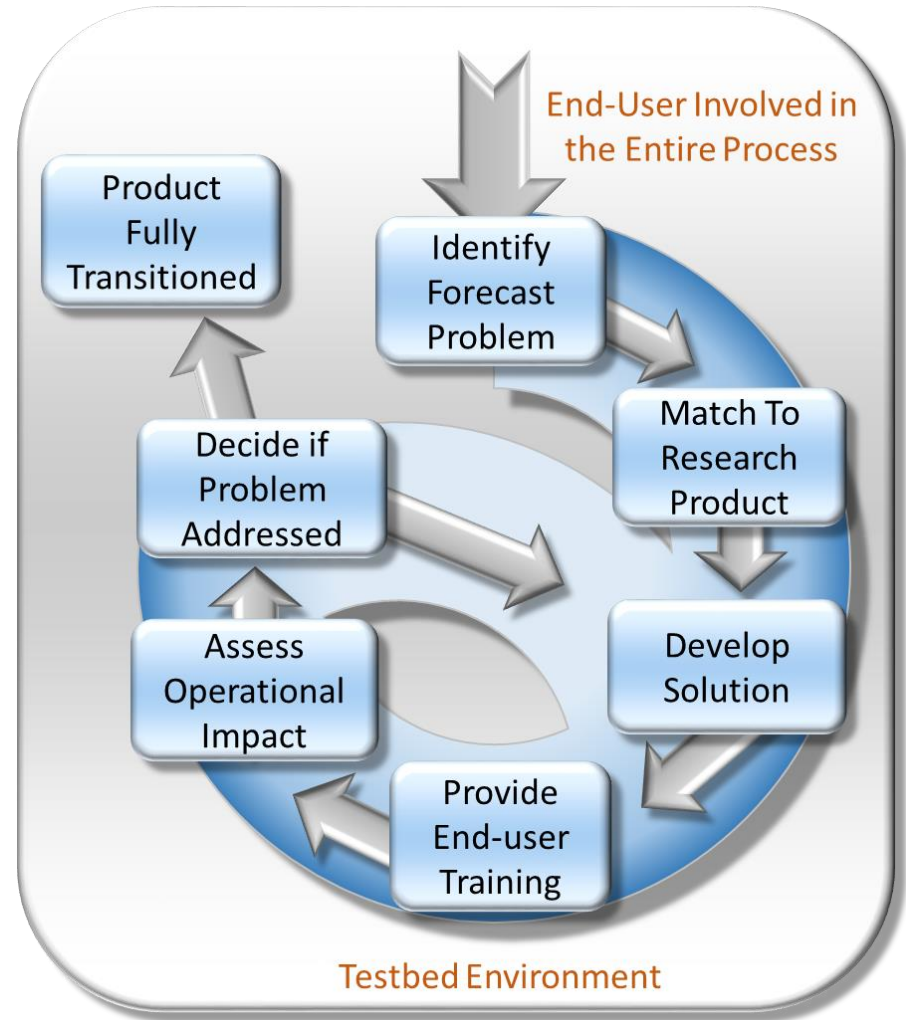
Can’t just “throw data over the fence”

- maintain interactive partnerships with help of specific advocates
- integrate into user decision support tools
- Create product training
- Perform targeted product assessments

Use experimental datasets and proxies in advance of operational use to demonstrate utility and impact

Concept has used to successfully transition a variety of satellite datasets to operational users for more than 10 years

Other groups in the community have adopted this paradigm

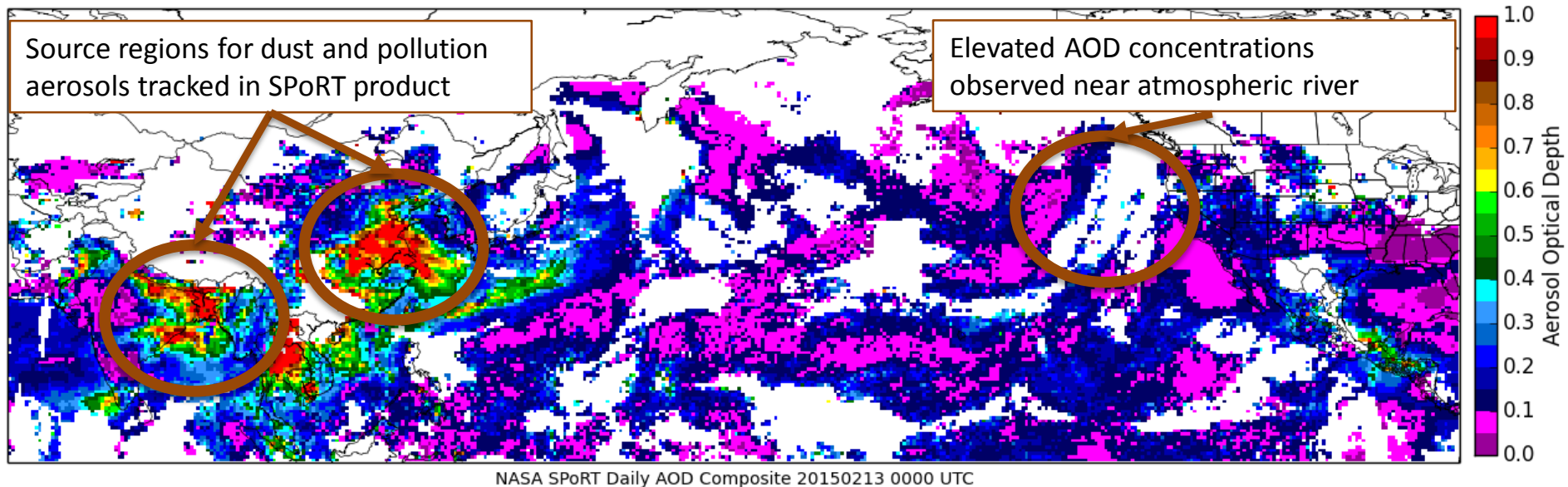


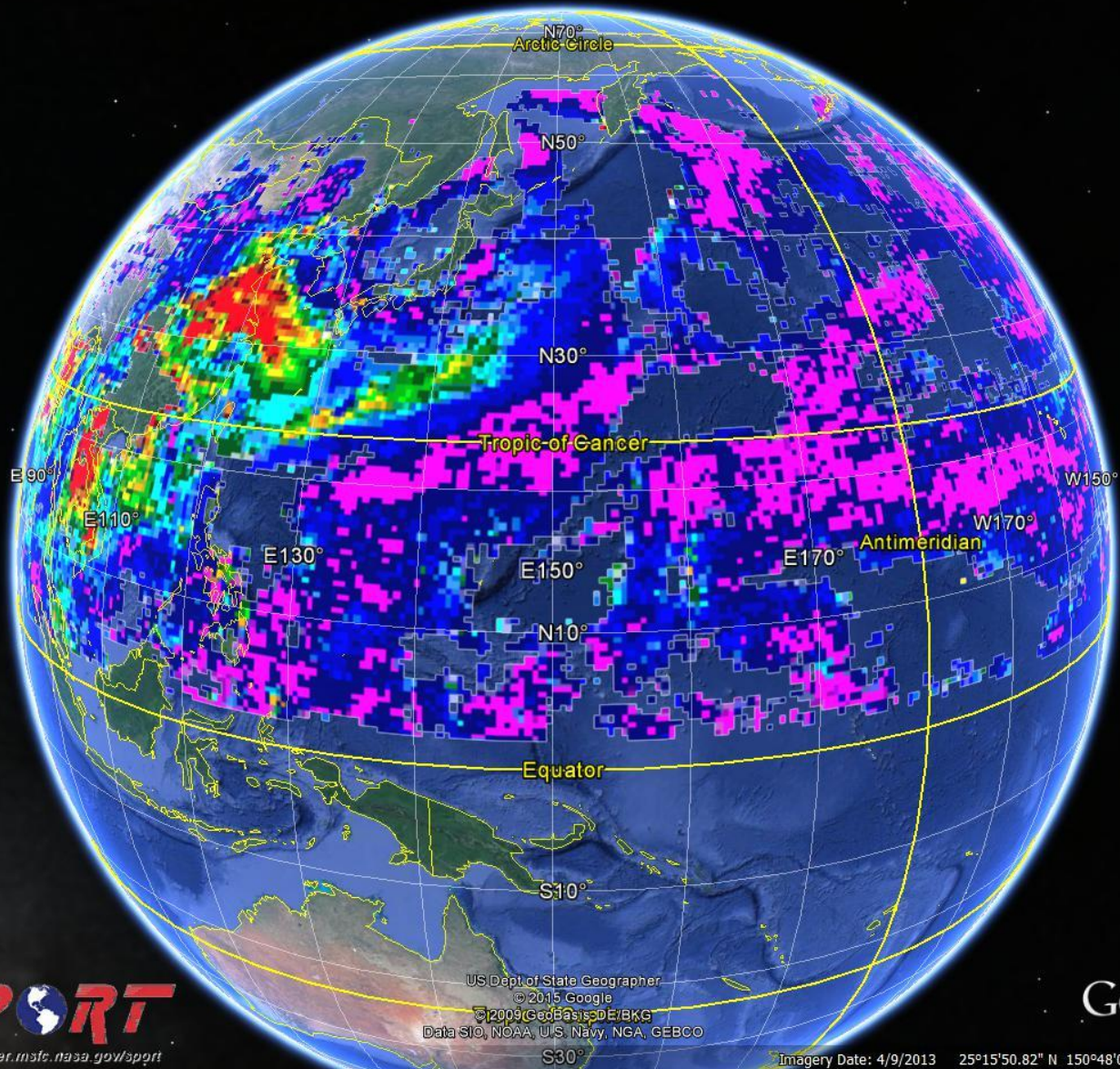
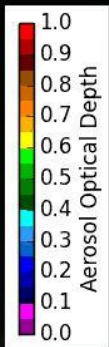
Collaborations with NOAA Research Community

SPoRT disseminated NRT multi-sensor aerosol optical depth (AOD) product to NOAA CalWater 2 science investigators to support aerosol forecasting and flight planning activities

Investigate how long-range transported aerosols modify the precipitation processes associated with atmospheric rivers

Working to assimilate AOD composite product into WRF-Chem to study cloud/aerosol interactions



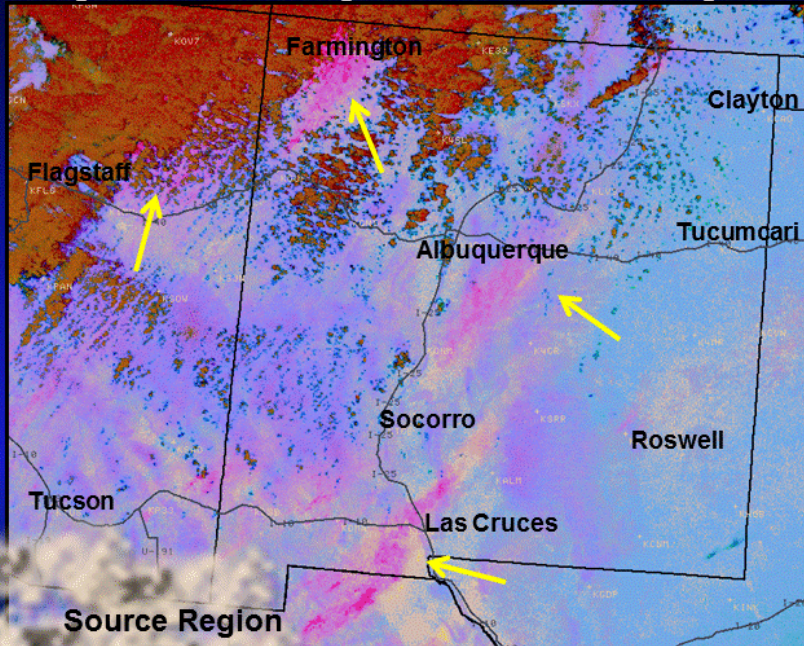


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Data SIO, NOAA, U.S. Navy, NGA, GEBCO

Collaborations with NOAA / NWS

Areas of Blowing Dust Impacting NM

Significant blowing dust indicated in magenta



MODIS/VIIRS Satellite Dust Detection
234pm April 8, 2013

Visibilities will be reduced to 1-3 miles across the region and as low as ½ mile in dust prone areas.

Travel across the region will be difficult through early this evening.

For the latest NM road conditions visit nmroads.com or dial 511.

Multispectral image composites (RGBs) fuse information from 3-6 channels to address specific forecast challenges

Here, SPoRT's partners in Albuquerque used MODIS and VIIRS imagery to improve the issuance of a "Dust Storm Warning" and to "Blowing Dust Advisory"

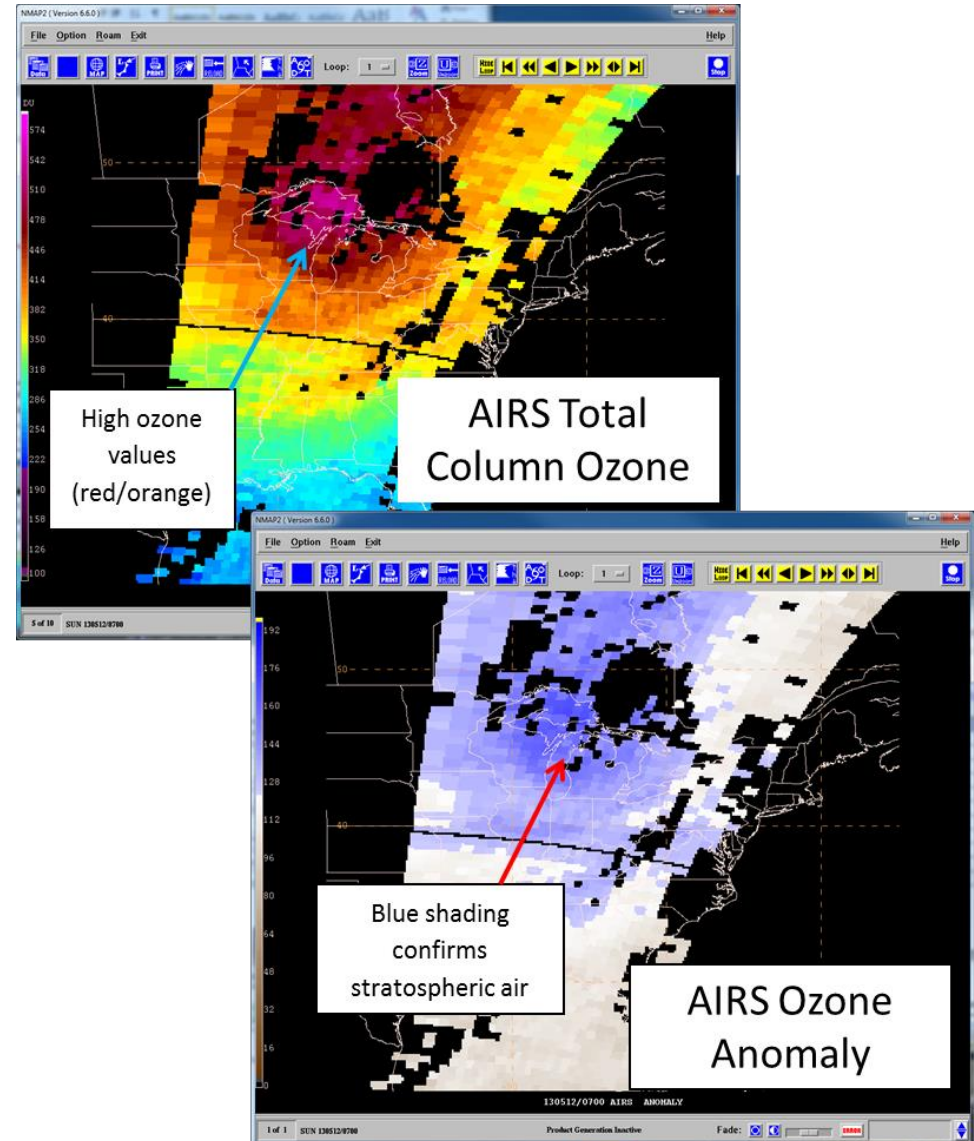
RGB integrated into Graphiccast (above) and other social media. ABQ reports that Power users are eager for this information" and that these products improve communication to the public.

Collaborations with NCEP / WPC, OPC, AWC

Total column ozone products derived from Hyperspectral IR Sounder retrievals provided to operational forecasters in N-AWIPS format

Identify stratospheric intrusions that can lead to rapid cyclogenesis and non-stratospheric high wind events (WPC, OPC)

Aviation Forecasting challenges of identifying turbulence near the jet stream and health/safety issues associated with elevated ozone near flight level (AWC)

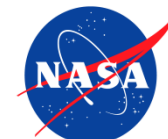


Support for TEMPO

Tropospheric ozone and aerosol measurements from TEMPO will provide value to operational forecasters if delivered in a timely manner

SPoRT can assist the TEMPO team with R2O:

- Work with operational centers to identify unique applications of TEMPO data within the operational weather community
- Provide guidance on data formatting and metadata to ensure usefulness at operational centers – especially as early proxy data formats are made available
- Develop new visualization capabilities for AWIPS II Decision Support System, as appropriate
- Coordinate feedback between product developers, science team, and end users on needed product improvements



Support for TEMPO

SPoRT is also engaged in a variety of relevant data assimilation activities

- Integrate TEMPO into AOD composite product
- Perform assimilation and NWP sensitivity studies using WRF-Chem

Beyond Weather:

- SPoRT (and the broader NASA Earth Science Office) is a community leader in development of advanced web-based data delivery capabilities
- Facilitate improvements to web-based visualization tools for displaying TEMPO and other NASA data that can be utilized by environmental and health-based operational decision making (e.g., EPA, state agencies)
- Leverage existing partnerships with CDC to provide data on harmful tropospheric pollutants



Questions/Discussion

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